Date: Wed, 9 Mar 94 03:59:15 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V94 #266
To: Info-Hams

Info-Hams Digest   Wed, 9 Mar 94   Volume 94 : Issue 266

Today's Topics:
Digest of Articles - QST Feb 1993 (Long - 40k)
IPS Daily Report 08 03 94
Keyboards at testing sessions
W1AW ET schedule in postscript [1/1] (uue)

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 9 Mar 1994 11:38:20 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!math.ohio-state.edu!
magnus.acs.ohio-state.edu!wvanhorn@network.ucsd.edu
Subject: Digest of Articles - QST Feb 1993 (Long - 40k)
To: info-hams@ucsd.edu

Greg WA9EVY wrote:

>The digest is too large for my mailer to digest. Can someone put this
>on an FTP or Gopher somewhere?

These postings are (or soon will be) available, courtesy of the Boston
ARC, at ftp.std.com. For info, contact Scott Ehrlich via wy1z@neu.edu.
I believe they will also be at several other ftp sites.

73, Van - W8UOF
```
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*   It ain't wot you don't know 't gets you into trouble.   *
*   It's wot you know 't ain't true. - "Mr. Dooley"         *
```

* *

wvanhorn@magnus.acs.ohio-state.edu

Date: Tue, 8 Mar 1994 23:13:09 GMT
From: ihnp4.ucsd.edu!munnari.oz.au!newshost.anu.edu.au!sserve!usage!metro!ipso!rwc@network.ucsd.edu
Subject: IPS Daily Report 08 03 94
To: info-hams@ucsd.edu

IPS RADIO AND SPACE SERVICES AUSTRALIA
Daily Solar And Geophysical Report
Issued at 2330 UT 8 March 1994
Summary for 8 March and Forecast up to 11 March
IPS Warning 07 was issued on 02 March and expires today.

1A. SOLAR SUMMARY

Activity: very low

Flares: none.

Observed 10.7 cm flux/Equivalent Sunspot Number : 091/036

1B. SOLAR FORECAST

	09 March	10 March	11 March
Activity	Very low	Very low	Very low
Fadeouts	None expected	None expected	None expected

Forecast 10.7 cm flux/Equivalent Sunspot Number : 090/034

1C. SOLAR COMMENT

None.

2A. MAGNETIC SUMMARY

Geomagnetic field at Learmonth : active to minor storm

Estimated Indices :	A	K	Observed A Index 7 March
Learmonth	33	4444 5553	
Fredericksburg	35		37
Planetary	55		55

2B. MAGNETIC FORECAST

DATE	Ap	CONDITIONS
09 Mar	30	Active.

10 Mar	20	Unsettled to active.
11 Mar	20	Unsettled.

2C. MAGNETIC COMMENT

None.

3A. GLOBAL HF PROPAGATION SUMMARY

	LATITUDE BAND		
DATE	LOW	MIDDLE	HIGH
08 Mar	normal	normal	poor-fair

PCA Event : None.

3B. GLOBAL HF PROPAGATION FORECAST

	LATITUDE BAND		
DATE	LOW	MIDDLE	HIGH
09 Mar	fair	poor	poor
10 Mar	normal	fair	poor
11 Mar	normal	fair	poor

3C. GLOBAL HF PROPAGATION COMMENT

Degraded HF comms are expected early today with an improvement by the end of the day. High lat HF comms will be slower to recover and may not show an improvement until tommorrow.

4A. AUSTRALIAN REGION IONOSPHERIC SUMMARY

MUFs at Sydney were about 30% below predicted monthly values

T index: -23

4B. AUSTRALIAN REGION IONOSPHERIC FORECAST

DATE	T-index	MUFs
09 Mar	5	About 15% below predicted monthly values.
10 Mar	20	About 10% below predicted monthly values.
11 Mar	30	Near predicted monthly values.

Predicted Monthly T Index for March is 40.

4C. AUSTRALIAN REGION COMMENT

Ionospheric conditions for today are expected to poor initially, then showing some improvement by this afternoon.

--

IPS Regional Warning Centre, Sydney |IPS Radio and Space Services
email: rwc@ips.oz.au |PO Box 5606
tel: +61 2 4148329 |West Chatswood NSW 2057
fax: +61 2 4148331 |AUSTRALIA

Date: 9 Mar 1994 11:43:42 GMT
From: yale.edu!noc.near.net!news.delphi.com!gilbaronw0mn@yale.arpa
Subject: Keyboards at testing sessions
To: info-hams@ucsd.edu

>In article <2lg5vo$err@news.delphi.com> mahjmac@news.delphi.com
(MAHJMAC@DELPHI.COM) writes:
>>>Just couldn't resist adding to his thread. Copying by typewriter has
been
>is not a good code in those respects. It was designed, rather haphazardly,
>in an era before a good understanding of information theory existed.
>And it was designed for use on essentially noiseless and interference
>free wire lines. It's use over radio is more of a historical accident
>than an intelligent choice.

On the other hand it is a very efficient code. Since it is variable lenght
it is kind of a built in compression. The most used letters have the fewest
elements. It is much more efficient than ascii, baudot and other fixed
length codes. It is also very precise as toi length and timing by
defintions. If it is machine sent it is one of the best codes around and was
created many years ago.

Gil Baron, El Baron Rojo, W0MN Rochester,MN
"Bailar es Vivir"
PGP2.3 key at key servers or upon request

Date: Tue, 8 Mar 1994 09:52:12 -0700
From: ihnp4.ucsd.edu!swrinde!gatech!newsxfer.itd.umich.edu!nntp.cs.ubc.ca!alberta!
ve6mgs!usenet@network.ucsd.edu
Subject: W1AW ET schedule in postscript [1/1] (uue)
To: info-hams@ucsd.edu

W1AW practice code schedule for Eastern Time Zone in postscript format

------------------------------------ <snip>

```
begin 644 w1awsked.ps
M!"4A4%,M061O8F4M,RXP"B4E0W)E871O<CH@5VEN9&]W<R!04T-225!4"B4E
M5&ET;&4Z($%M:2!0<F\@+2 H56YT:71L960I"B4E0F]U;F1I;F=";W@Z(#$X
M(#D@-3DS(#<X- HE)41O8W5M96YT3F5E9&5D4F5S;W5R8V5S.B H871E;F0I
M"B4E1&]C=6UE;G13=7!P;&EE9%)E<V]U<F-E<SH@*&%T96YD*0HE)5!A9V5S
M.B H871E;F0I"B4E0F5G:6Y297-O=7)C93H@<')O8W-E="!7:6XS-41I8W0@
M,R Q"B]7:6XS-41I8W0@,CDP(&1I8W0@9&5F(%=I;C,U1&EC="!B96=I;B]B
M9'MB:6YD(&1E9GUB:6YD(&1E9B]I;GLW,@IM=6Q]8F0O961[97AC:"!D969]
M8F0O;&1[;&]A9"!D969]8F0O='(O=')A;G-L871E(&QD+V=S+V=S879E(&QD
M+V=R"B]G<F5S=&]R92!L9"]-+VUO=F5T;R!L9"],+VQI;F5T;R!L9"]R;70O
```

```
M<FUO=F5T;R!L9"]R;'0O<FQI;F5T;R!L9 HO<F-T+W)C=7)V971O(&QD+W-T
M+W-T<F]K92!L9"]N+VYE=W!A=&@@;&0O<VTO<V5T;6%T<FEX(&QD+V-M+V-U
M<G)E;G1M871R:7@*;&0O8W O8VQO<V5P871H(&QD+T%20R]A<F-N(&QD+U12
M>S8U-3,V(&1I=GUB9"]L:B]S971L:6YE:F]I;B!L9"]L8PHO<V5T;&EN96-A
M<"!L9"]M;"]S971M:71E<FQI;6ET(&QD+W-L+W-E=&QI;F5W:61T:"!L9"]S
M8VEG;F]R92!F86QS90ID968O<V-[<V-I9VYO<F5[<&]P('!O<"!P;W!]>S @
M:6YD97@@,B!I;F1E>"!E<2 R(&EN9&5X(#0@:6YD97@@97$*86YD>W!O<"!P
M;W @,C4U(&1I=B!S971G<F%Y?7LS>S(U-2!D:78@,R Q(')O;&Q]<F5P96%T
M('-E=')G8F-O;&]R?6EF96QS97UI9F5L<V5]8F0*+T9#>V)2(&)'(&)"('-C
M?6)D+V9#>R]B0B!E9"]B1R!E9"]B4B!E9'UB9"](0WMH4B!H1R!H0B!S8WUB
M9"]H0WL*+VA"(&5D+VA'(&5D+VA2(&5D?6)D+U!#>W!2(!'('!"('-C?6)D
M+W!#>R]P0B!E9"]P1R!E9"]P4B!E9'UB9"]S30IM871R:7@@9&5F+U!E;E<@
M,2!D96680:5!E;B U(&1I=B]M>$8@;6%T<FEX(&1I=B]M>$4@;6%T<FEX(&1E
M9B]M>%5%"FUA=')I>"!D96680;7A51B!M871R:7@@9&5F+V9"12!F86QS92!D
M9680:41E=E)E<R W,B P(&UA=')I>"!D969A=6QT;6%T<FEX"F1T<F%N<V9O
M<FT@9'5P(&UU;"!E>&-H(&1U<"!M=6P@861D('-Q<G0@9&5F+V904"!F86QS
M92!D96804U-[9E!0>PHO4U8@<V%V92!D969]>V=S?6EF96QS97UB9"]24WMF
M4%![4U8@<F5S=&]R97U[9W)]:69E;'-E?6)D+T5*>V=S879E"G-H;W=P86=E
M(&=R97-T;W)E?6)D+R-#>W5S97)D:6-T(&)E9VEN+R-C;W!I97,@,@96YD
M?6)D+T9%8G5F(#(@<W1R:6YG"F1E9B]&16=B]&16=L>7!E(&0("ED96801D5[,2!E
M>&-H>V1U<" Q-B!&16)U9B!C=G)S(&$9%9VQY<&@@97AC:" Q(&5X8V@@*<'5T
M:6YT97)V86P@,2!I;F1E>"!E>&-H($9%9VQY<&@@8W9N('!U='-U9;W)]8F0O
M4TU[+VE297,@;@960O8WE0(&5D"B]C>%!G(&5D+V-Y32!E9"]C>$T@960@-S(@
M,3 P(&1I=B!D=7 @<V-A;&4@9'5P(# @;F5[.3 @97%[8WE-(&5X8V@@*,"!E
M<7MC>$T@97AC:"!T<B M.3 @<F]T871E("TQ(#$@<V-A;&5]>V-X32!C>%!G
M(&%D9"!E>&-H*'1R("LY+"!R;W1A=&5]:69E;'-E?7MC>$T@-2 *8WE-("0U8B!E
M>&-H(# @;F5[8WA-(&5X8V@@=')A;G-L871E(&-X4&<@8WE0(&-X32!-+S861D
M(&5X8V@@=')A;G-L871E(&-X4&<@8WE0(&-X32!-+S@8V]N8V%T(&-X32!C>5]
M=U('(@,3@P(')O=&%T=U('(@,2!M,2!S8V%L97UI9F5L<V5]
M:69E;'-E*#$P+"!I4F5S"F1I=B!D=7 @<V-A;&4@,"!P('1R86YS9F]R;2 N
M,C4@861D('(O=6YD("XR-2!S=6(@97AC:" N,C4@861D('(O=6YD"BXR+2!S
M=6(@97AC:"!I=')A;G-F;W)M('1R86YS;&%T97UB9"]32GLQ(&EN9&5X(# @
M97%[<&]P('!O<"]F0D4@9F%L<V4@9&5F?7LQ(&EN9&5X+T(@97%[96YD92!R96%D
M=B]D>$)R96%K(&5D+V1Y0G)E86L@960O9$(@96%D)?V(&1E9GUI9F5L<V5]8F0O04Y3259E8UL*
M,38C,"]G<F%V92 Q-B,Q+V%C=71E(#$V(S(O8VER8W5M9FQE>" Q-B,S+W1I
M;&1E(#$V(S0O;6%C<F]N(#$V(S4O8G)E=F4@,38C-B]D;W1A8V-E;G0@,38C
M-R]D:65R97-I<R Q-B,X+W)I;F<@,38C.2]C961I;&QA(#$V(T$O:'5N9V%R
M=6UL875T"C$V(T(O;V=O;F5K(#$V(T,O8V%R;VX@,38C1"]D;W1L97-S:2 Q
M-B,R-R]Q=6]T97-I;F=L92 Q-B,V,"]G<F%V90HQ-B,W0R]B87(@,38C.#(O
M<750=&5S:6YG;&%N(#$V(S@T.,O9FQO<FEN(#$V(S@U+V5L;&EP<VES"C$V(S@V
M92 Q-B,X-0HO96QL:7!S:7,*,38C.#@O9&%G9V5R9&)L(#$V(S@Y+V1A9V=E
M;" Q-B,X.2]P97)T:&]U<V%N9" Q-B,X02]38V%R;VX@,38C.3(O<75O=&5R
M;;F=L;&5F=" Q-B,X0R]/12 Q-B,Y,2]Q=6]T96QE9G0@,38C.3(O<75O=&5R
M:6=H=" Q-B,Y,PHO<75O=&5D8FQL969T(#$V(SDT+W%U;W1E9&)L<FEG:'0@
M,38C.34O8G5L;&5T(#$V(SDV+V5N9&%S:" Q-B,Y-R]E;61A<V@@,38C.3@*
M+W1I;&1E(#$V(SDY+W1R861E;6%R:R Q-B,Y02]S8V%R;VX@,38C.4(O9W5I
M;"PO=C4*,38C.4,O;V4@,38C.40O>F-A<F]N(#$V(SE%+UED:65R97-I<R Q
M<G)E;F-Y(#$V(T$V+V)R;VME;F)A<B Q-B-!-R]S96-T:6]N"C$V(T$X+V1I
M97)E<VES(#$V(T$Y+V-O<'ER:6=H=" Q-B-!02]O<F1F96UI;FEN92 Q-B-!
M0B]G=6EL;&5M;W1L969T"C$V(T%#+VQO9VEC86QN;W0@,38C040O:'EP:&5N
M(#$V(T%%+W)E9VES=&5R960@,38C048O;6%C<F]N(#$V(T(P+V1E9W)E90HQ
M-B-",2]P;'5S;6EN=7,@,38C0C(O='=O<W5P97)I;W(@,38C0C,O=&AR965S
M=7!E<FEO<B Q-B-"-"]A8W5T92 Q-B-"-0HO;74@,38C0C8O<&%R86=R87!H
M(#$V(T(W+W!E<FEO9&-E;G1E<F5D(#$V(T(X+V-E9&EL;&$@,38C0CDO;VYE
M<W5P97)I;W(*,38C0D$O;W)D;6%S8W5L:6YE(#$V(T)"+V=U:6QL96UO=')I
M9VAT(#$V(T)#+V]N97%U87)T97(@,38C0D0O;VYE:&%L9@HQ-B-"12]T:')E
M97%U87)T97)S(#$V(T)&+W%U97-T:6]N9&]W;B Q-B-#,"]!9W)A=F4@,38C
M0S$O06%C=71E(#$V(T,R"B]!8VER8W5M9FQE>" Q-B-#,R]!=&EL9&4@,38C
M0S0O061I97)E<VES(#$V(T,U+T%R:6YG(#$V(T,V+T%%(#$V(T,W"B]#8V5D
M:6QL82 Q-B-#."]%9W)A=F4@,38C0SDO16%C=71E(#$V(T-!+T5C:7)C=6UF
M;&5X(#$V(T-"+T5D:65R97-I<PHQ-B-#0R])9W)A=F4@,38C0T0O26%C=71E
M(#$V(T-%+TEC:7)C=6UF;&5X(#$V(T-&+TED:65R97-I<R Q-B-$,"]%=&@*
M,38C1#$O3G1I;&1E(#$V(T0R+T]G<F%V92 Q-B-$,R]/86-U=&4@,38C1#0O
M3V-I<F-U;69L97@@,38C1#4O3W1I;&1E"C$V(T0V+T]D:65R97-I<R Q-B-$
M-R]M=6QT:7!L>2 Q-B-$.")/<VQA<V@@,38C1#DO56=R879E(#$V(T1!+U5A
M8W5T90HQ-B-$0B]58VER8W5M9FQE>" Q-B-$0R]59&EE<F5S:7,@,38C1$0O
M66%C=71E(#$V(T1%+U1H;W)N(#$V(T1&+V=E<FUA;F1B;',*,38C13 O86=R
M879E(#$V(T4Q+V%A8W5T92 Q-B-%,B]A8VER8W5M9FQE>" Q-B-%,R]A=&EL
M9&4@,38C13 O861I97)E<VES"C$V(T4U+V%R:6YG(#$V(T4V+V%E(#$V(T4W
M+V-C961I;&QA(#$V(T4X+V5G<F%V92 Q-B-%.2]E86-U=&4@,38C14$*+V5C
M:7)C=6UF;&5X(#$V(T5"+V5D:65R97-I<R Q-B-%0R]I9W)A=F4@,38C1400
M:6%C=71E(#$V(T5%+VEC:7)C=6UF;&5X"C$V(T5&+VED:65R97-I<R Q-B-&
M,"]E=&@@,38C1C$O;G1I;&1E(#$V(T8R+V]G<F%V92 Q-B-&,R]O86-U=&4@
M,38C1C0*+V]C:7)C=6UF;&5X(#$V(T8U+V]T:6QD92 Q-B-&-B]O9&EE<F5S
M:7,@,38C1C<O9&EV:61E(#$V(T8X+V]S;&%S: HQ-B-&.2]U9W)A=F4@,38C
M1D$O=6%C=71E(#$V(T9"+W5C:7)C=6UF;&5X(#$V(T9#+W5D:65R97-I<R Q
M-B-&1"]Y86-U=&4*,38C1D4O=&AO<FX@,38C1D8O>61I97)E<VES(%T@9&5F
M+W)E96YC9&EC=" Q,B!D:6-T(&1E9B]])<T-H87)[8F%S9690;G1D:6-T"B]#
M:&%R4W1R:6YG<R!G970@97AC:"!K;F]W;GUB9"]]-87!#:'MD=7 @27-#:&%R
M(&YO='MP;W 08G5L;&5T?6EF"FYE=V90;G0016YC;V1I;F<@9V5T(#,@,2!R
M;VQL('!U='UB9"]]-87!!$96=R965[,38C8C O9&5G<F5E($ES0VAA<GL*+V1E
M9W)E97U[+W)I;F=]:69E;'-E($UA<$-H87)0:')A<V$)">S$V(V$V+V)R;VME
M;F)A<B!)<T-H87)[+V)R;VME;F)A<GU["B]B87)]:69E;'-E($UA<$-H87)0:')A<V$)D
M+T%.4TE&;VYT>W)E96YC9&EC="!B96=I;B]N97=F;VYT;F%M92!E9"]B87-E
M9F]N=&YA;64*960@1F]N=$1I<F5C=&]R>2!N97=F;VYT;F%M92!K;F]W;B!N
M;W1[+V)A<V5F;VYT9&EC="!B87-E9F]N=&YA;64@9FEN9&9O;G0*9&5F+VYE
M=V90;G0@8F%S9690;G1D:6-T(&UA>&QE;F=T:"!D:6-T(&1E9B!B87-E9F]N
M=&1I8W1[97AC:"!D=7 O1DE$$"FYE>V1U<"]]%;F-O9&EN9R!E<7ME>&-H(&1U
M<"!L96YG=&@@87)R87D@8V]P>2!N97=F;VYT(#,@,2!R;VQL('!U='U[97AC
M: IN97=F;VYT(#,@,2!R;VQL('!U='UI9F5L<V5]>W!O<"!P;W!]:69E;'-E
M?690<F%L;"!N97=F;VYT+T90;G1.86UE"FYE=V90;G1N86UE('!U=" Q,C<@
M,2 Q-3E[;F5W9F]N=")]%;F-O9&EN9R!G970@97AC:"]]B=6QL970@<'5T?690
M<@I!3E-)5F5C(&%L;V%D('!O<"!!3E-)5F5C(&QE;F=T:" R(&ED:79[36%P
M0VA]<F5P96%T($UA<$1E9W)E92!-87!"0@IN97=F;VYT;F%M92!N97=F;VYT
M(&1E9FEN969O;G0@<&]P?6EF(&YE=V90;G1N86UE(&5N9'UB9"]]30GM&0R]5
M3&QE;@IE9"]S='(@960@<W1R(&QE;F=T:"!F0D4@;F]T>V1U<" Q(&=T>S$@
M<W5B?6EF?6EF+V-B4W1R(&5D+V1X1V1I(&5D"B]Y,"!E9"]X,"!E9"!S='(@
M<W1R:6YG=VED=&@@9'5P(# @;F5[+WDQ(&5D+W@Q(&5D('DQ('DQ(&UU;"!X
M,2!X,0IM=6P@861D('-Q<G0@9'A'9&D@97AC:"!D:78@,2!S=6(@9'5P('@Q
M(&UU;"!C8E-T<B!D:78@97AC:"!Y,2!M=6P*8V)3='(@9&EV?7ME>&-H(&%B
M<R!N96<@9'A'9&D@861D(&-B4W1R(&1I=B!E>&-H?6EF96QS92]D>45X=')A
M(&5D"B]D>$5X=')A(&5D('@P('DP($T@9D)%>V1X0G)E86L@,"!"0V@@9'A%
M>'1R82!D>45X=')A('-T<B!A=VED=&AS:&]W?7MD>$5X=')A"F1Y17AT<F$@
M<W1R(&%S:&]W?6EF96QS92!F54Q[># @>3 @32!D>%5,(&1Y54P@<FUT(%5,
M;&5N(&9"17M"<F5A:PIA9&1]:68@,"!M>%5%('1R86YS9F]R;2!G<R!R;'0@
M8WE53"!S;"!;72 P('-E=&1A<V@@<W0@9W)]:68@9E-/>W@P"GDP($T@9'A3
M3R!D>5-/(')M="!53&QE;B!F0D5[0G)E86L@861D?6EF(# @;7A512!T<F%N
M<V9O<FT@9W,@<FQT(&-Y54P*<VP@6UT@,"!S971D87-H('-T(&=R?6EF(&XO
M9D)%(&9A;'-E(&1E9GUB9"]F;VYT>R]N86UE(&5D+T%S8V5N=="!E9 HP(&YE
M+V94,R!E9" P(&YE+V933R!E9" P(&YE+V953"!E9"]3>2!E9"]3>"!E9" Q
M,"XP(&1I=B]O<FD@960@+3$P+C *9&EV+V5S8R!E9"]"0V@@960@;F%M92!F
M:6YD9F]N="]X07-C96YT(# @9&5F+WE!<V-E;G0@07-C96YT(&1E9B]S53&5S
M8PIE<V,@9&5F(%5,97-C(&UX544@<F]T871E('!O<"!F5#-+6+V5S8R P(&1E
M9B!X07-C96YT('E!<V-E;G0@;7A512!T<F%N<V9O<FT*+WE!<V-E;G0@9600O
M>$%S8V5N=="!E9'UI9B!;4W@@," P(%-Y(&YE9R!X07-C96YT('E!<V-E;G1=
M(&5S8R!M>$4*<F]T871E(&UX1B!C;VYC871M871R:7@@;6%K969O;G0@<V5T
M9F]N="!;4W@@," P(%-Y(&YE9R P($%S8V5N=%T@;7A510IM>%5&(&-O;F-A
M=&UA=')I>"!P;W @9E5,>V-U<G)E;G1F;VYT(&1U<"]&;VYT26YF;R!G970O
M56YD97)L:6YE4&]S:71I;VX*:VYO=VX@;F]T>W!O<"]]#;W5R:65R(&9I;F1F
M;VYT?6EF+T90;G1;F90(&=E=")5;F1E<FQI;F50;W-I=&EO;B!G970O*,3 P
M,"!D:78@,"!E>&-H(&UX548@=')A;G-F;W)M+V1Y54P@96009'A53"!E9'UI
M9B!F4T]][," N,R!M>%5&('1R86YS9F]R;0HO9'E33R!E9"]D>%-/(&5D?6EF
M(&953"!F4T\@;W)[8W5R<F5N=&9O;G0@9&5P:6YD+T%S8V5N="!G970O5&AI
M8VMN97-S(&EC:"!/=%T>W!O<"]]#;W5R:65R(&9I;F1F;VYT?6EF+T90;G1
M?6EF+T90;G1;F90(&=E=")5;F1E<FQI;F54:&EC:VYE<W,@9V5T"C$P,"!D
M9&EV(%-Y(&UU;")C>55,(&5D?6EF?6)D+VUI;GLR(&-O<'D@9W1[97AC:'UI
M9B!P;W!]8F00;6%X>S(@8V]P>2!L='ME>&-H?6EF('!O<'UB9"]#3&1E9G5L
M961F;G0@9&5F(&1E9B!N97<@;F%M92!F:6YD9F]N="!-5&1E9FEN969O;G0=
M;G1F;G0@9&5F(&1E9B!N97<@;F%M92!F:6YD9F]N="!-5&1E9FEN969O;G0*
M9F]N=" Q,"!D:6-T(&1U<"!B96=I;B!C=7)R96YT9&EC=" O1&EV970;F]T
M9B]&;VYT36%T<FEX(%LQ(# @," Q(# @,%T@9&5F+T9O;G14>7!E(#,@9&5F
M(#$$V(#$$V70ID968O16YC;V1I;F<@,C4V(&%R<F%Y(&1E9B P(#$@,C4U('MO
M;F%T;B!E;F-O9&EN9R!E>&-H("!P;W @,"!P(# @,"!P(# @,"!P(# @,38*<V5T8V%C:&5D979I8V4@
M,38@,38@9F%L<V4@6S$@," P(#$@+C(U(%!X>R]N86UE(&=E;;6%S:WUB
M9"!E;F0<'L*+W!A=" S,B!S=')I;F<@9&5F>WUF;W)A;&P@,"!Q(#=[9'5P
M(#(@;75L('!A="!E>&-H(#,@:6YD97@@,B!M=6P@,38@861D(&!A="!E>&-H
M(#,@:6YD97@@;75L('!A="!E>&-H('!O<" S(&EN9&5X('!A="!E>&-H(# R
M(#,@:6YD97@@;75L(#(@861D('!A="!E>&-H(# @;75L(#,@;75L('!A="!U
M="!P;W!]9F]R(&9I;&QP871T97)N(&!A=&ET>*9&5F:6YE9F]N="!P;W!]8F0O
M="!S971F;VYT+V-H*$%!04$I9&5F(%!X>V-H(#(@1&PI('!E;VP@8V%N(&EN
M9&5X(&5X8V@@,C!C: IS:&]W?690<B!P;W!]9F]R(&=E<G1R;6]E<G@[6# @=R!8
M,7MD=7 @63 @32 @32!9,2 ,('-T?690<B!0='UI9B!D96QT82!53" @=&UA<P
M(&5X8V@@32!8,2 ,2!E>&-H(&$P(%=R;6]E<G@@=%D`&5S;W)D9&9I9#E.<V @
M32!8,2!8,"!S=6(@9'5P"G)L="!S='UF;W(@63 @=R!9,7M8,"!E>&-H($T@
M63$@63 @<W5B(&1U<"!R;'0@<W1]9F]R?6)D+V)D:6%G>U@P('<*6#%[63$@
M32!8,2!8,"!S=6(@9'5P(&YE9R!R;'0@<W1]9F]R(%DP('<@63%[6# @97AC
M:"!-(%DQ(%DP('-U8B!D=7 *;F5G(')L="!S='UF;W)]8F0O055[,2!A9&0@
M8W9I(#$U(&]R?6)D+T%$>S$@<W5B(&-V:2 M,38@86YD?6)D+U-(4GMP871H
M8F)O> I!52]9,2!E9"!!52]8,2!E9"!!1"]9,"!E9"!!1"]8,"!E9'UB9"]H
M9FEL;'LO=R!I4F5S(#,W+C4@9&EV(')O=6YD"F1E9B P+C$@<VP@6UT@,"!S
M971D87-H(&X@9'5P(# @97%[:&]R>GUI9B!D=7 @,2!E<7MV97)T?6EF(&1U
M<" R(&5Q>V9D:6%G?6EF"F1U<" S(&5Q>V)D:6%G?6EF(&1U<" T(&5Q>VAO
M<GH@=F5R='UI9B U(&5Q>V9D:6%G(&)D:6%G?6EF?6)D+T9[+V9T"F5D(&9M
M(#(U-B!A;F0@,"!N97MG<R!&0R!F=" P(&5Q>V9I;&Q]>V5O9FEL;'UI9F5L
M<V4@9W)]:68@9FT@,34S-@IA;F0@,"!N97M32%(@9W,@,2$,@9G0@0U @9FT@
M,3 R-"!A;F0@,"!N97LO5&UP('-A=F4@9&5F('!F:6QL(%1M<"!R97-T;W)E
M?7MF;0HQ-2!A;F0@:&9I;&Q]:69E;'-E(&=R?6)D+U-[4&5N5R!S;"!0
M0R!S='UB9"]M(&UA=')I>"!D96AO1U=[:5)E<PHQ,B!D:78@4&5N5R!A9&0@
M8W9I?6)D+T1O5WMI4F5S(#4P(&1I=B!096Y7(&%D9"!C=FE]8F0O1%=[:5)E
M<R X(&1I=@I096Y7(&%D9"!C=FE]8F0O4U![+U!E;E<@960O:5!E;B!E9"!I
M4&5N(# @97$@:5!E;B V(&5Q(&]R>UM=(# @<V5T9&%S:'UI9@II4&5N(#$@
M97%[6T17($=772 P('-E=&1A<V@:5!E;B R(&5Q>UM$;U<@1U=="!0(# @
M<V5T9&%S:'UI9B!I4&5N"C,@97%[6T17($=7(%$O5R!'5UT@,"!S971D87-H
M?6EF(&E096X@-"!E<7M;1%<@1U<@1%<@1U==(# @<V5T9&%S:'UI9B!I4&5N
M?6EF?6)D+T5[;2!C;2!P;W @=')(@<V-A;&4@,2 P(&UO=F5T;R!P(# @,2 P
M(#,V,"!A<F,@8W @;2!S;7UB9 HO04=[+W-Y('-X(&1I=B!C<'QL('-Y"F1I
M=B T(#$@<F]L;"!A=&%N(&%T86XO83$@9605@<W=@@<WD@<V-A;&4@<W@@
M83$@83(@05)#?61E9B]!>VT@8VT@*<&]P('1R($$%'(&T@<VU]9F5U![;2!C
M;2!P;W @=')A;G-L871D96804E)E8W1[;B!T(&-O<'D*
M32 S(#$$@<F]L;"!E>&-H($P@-" R(')O;&P@3"!,("P(&-P?6)D+U)20T-[+W(@
M960O>#$$@9600O>#$$@96000>3 @9600O># *960@>#$@861D(#(@9&EV('DP
M($T@>#$$@>#$@>3$$@>3$$@/B!A<F-T;R!T>W!O<'UR97!E870@>#$$@>3$$@># @
M>3$*/B!A<F-T;R!T>W!O<'UR97!E870@># @>3$$@># @>3 @/B!A<F-T;R!T
M>W!O<'UR97!E870@># @>3 @>#$$@>3 @/@IA<F-T;R!T>W!O<'UR97!E870@
M8W!]8F0O4E)E8W1[,B!C;W!Y(# @97$@97AC:" P(&5Q(&]R>W!O<"!P;W @4E)E
M8W1]>S(*8V]P>2!E<7MP;W @4E)E8W1]>#0WU[;2!C;2!P;W @O>3(@9600O>#(@9600O
M>7,@>3(@>#(@9&EV(#$$@;6%X(&1E9B!R>W!O<GX,@;B!D:78@,2!M87@@9&5F
M+WDQ(&5X8V@@>7,@9&EV(&1E9B]X,2!E>&-H('AS(&1I=B!D968O>3 @97AC
M:"!Y<R!D:78*9&5F+W@P(&5X8V@@>',@9&EV(&1E9B]R,B!X,B!Y,B!M:6X@
M9&5F('AS('ES('-C86QE('@P('@Q(&%D9" R(&1I=B!Y,"!Y,2!A9&0@,B!D
M('DQ('(R(&%R8W1O(#1[(&-P?6)D+T5E<5A=(B!X(&DP('DP('@Q('DP('(R(&%R8W1O(#1[
M;R!T>W!O<'UR97!E870O*>W!O<'UR97!E870@># @>3 @/B!A<F-T;R!T
M96%T('-P('DP('(R(&%R8W1O(#1[(&-P?6)D+T5E<5A= IM('-M(&-P
M?6EF96QS92!S97UI9F5L<V4@;W)]8F0O4%(I;W(@4E)E8W1]>S(*8V]P>2!N
M97LW(#,@,&!R;'0@<&%T:'U[<V5T<6)D+UY[+UU9(&5D"B]X(&5D('!A=&@@
M871E('-P(&ET92!S;&5E<"!X('1R86YS;&%T92 M,!R(&-V:2!T<F%N<VQA
M=&4@9FEL;"!G<F5S=&]R95U"(&ET92!S;&5E<"!X('1R86YS;&%T92 M,!R
M;'0@9'1H96P@9&5F;W(@,G!O:6YT(')A9&EU<R!D:78@8W0@-#!E>&-H(&-O
M;&]R(&-O;&]R=&\@<F%N9V4@<F%N9V4@,"!N97$@9&5F(&-L;W-E<&%T:"!D968*
M<;'0@9&EV(&1U<"!M=6PQ(&5X8V@@9&5F(&-O;G1R;VQ$8V%L92!S97%R="!D968
M;&EN97)V86QU92!D968@<6)D*'!A=&@I(&1U<"!M=6PQ(&9O<FUA="!P87)T
M;'!E<V]L=&EO;B!D968@<S(@9&EV("%L92!D968@<6)D(&1E9B!M=6PQ(&1E9B!S
M<V<')O;&4@<V5T9W)A>2!D968@<VAO=W!A9V4@<W1R;VME(&5X8V@@9&5F(&YE
```

```
M97)R:&5L<&1I8W0@8F5G:6XO<W1A8VMU;F1E<F9L;W<H;W!E<F%N9"!S=&%C
M:R!U;F1E<F9L;W<I9&5F"B]U;F1E9FEN960H=&AI<R!N86UE(&ES(&YO=")D
M969I;F5D(&EN(&$@9&EC=&EO;F%R>2ED96805DUE<G)O<BAY;W4@:&%V92!U
M<V5D('5P(&%L;"!T:&4@<')I;G1E<B=S(&UE;6]R>2ED968*+W1Y<&5C:&5C
M:RAO<&5R871O<B!W87,@97AP96-T:6YG(&$@9&EF9F5R96YT('1Y<&4@;V8@
M;W!E<F%N9"ED968*+VEO97)R;W(H:6YP=70O;W5T<'5T(&5R<F]R(&]C8W5R
M960I9&5F(&5N9'ME;F1]:68@97)R;W)D:6-T(&)E9VEN"B]H86YD;&5E<G)O
M<GLD97)R;W(@8F5G:6X@;F5W97)R;W)[+VYE=V5R<F]R(&9A;'-E(&1E9B!S
M:&]W<&%G92 W,@HW,B!S8V%L92]X("XR-2!D968O>2 Y+C8@9&5F+TAE;'9E
M=&EC82!F:6YD9F]N=" N,B!S8V%L969O;G0@<V5T9F]N= IX('D@;6]V971O
M*$]F9F5N9&EN9R!#;VUM86YD(#T@*7-H;W<O8V]M;6%N9"!L;V%D>V1U<"!T
M>7!E+W-T<FEN9W1Y<&4*;F5[*&UA>"!E<G(@<W1R:6YG*6-V<WUI9B!S:&]W
M?65X96,O>2!Y("XR(!D968@>"!Y(&UO=F5T;RA%<G)O<B ](@("ES:&]W
M"F5R<F]R;F%M97MD=7 @<='EP92!D=7 H(&UA>"!E<G(@<W1R:6YG*"EC=G,@
M<VAO=R@@I<VAO=R]S=')I;F=T>7!E(")FYE>R@@;6%X(&5R<B!S=')I;F<@
M*6-V<WUI9B!S:&]W?65X96,@97)R;W)D:6-T(&)E9VEN(&5R<FAE;'!D:6-T
M(&5R<F]R;F%M90IK;F]W;GMX(#$@861D('D@+C(@<W5B(&UO=F5T;R!E<G)H
M96QP9&EC="!E<G)O<FYA;64@9V5T('-H;W=]:68@96YD"B]Y('D@+C0@<W5B
M(&1E9B!X('D@;6]V971O*%-T86-K(#TI<VAO=R!O<W1A8VVM[+WD@>2 N,B!S
M=6(@9&5F('@@,0IA9&0@>2!M;W9E=&\@)5P('1Y<&40<W1R:6YG=&EP92!N
M97LH(&UA>"!E<G(@<W1R:6YG("EC=G,@<W1R:6YG=&EP92!<VAO=W!A;&P@=W!A
M9V5]:68@96YD?61E9B!E;F1]8F0@96YD"B4E16YD4F5S;W5R8V4*+U-&(&1C
M*'-A=F4@9&5F"B4E16YD4')O;&&]G"B4E0F5G:6Y3971U< I7:6XS-41I8W0@
M8F5G:6X*17)R2&%N9&QE<@IS=&%T=7-D:6-T(&)E9VEN(# @<V5T:F]B=&EM
M96]U="!E;F0*<W1A='5S9&EC=&!B96=I;B!S=&%T=7-D:6-T(")]J;V)N86UE
M("A!;6D@4')O("T@*%5N=&ET;&5D*2D@<'5T(&5N9"!HO;VQD1&EC=$-N="!C
M;W5N=&1I8W1S=&%C:R!D968@>WUS=&]P<&5D( I[(&-O=6YT9&EC='-T86-K
M(&]L9$1I8W1#;G0@9W1[96YD?6QO;W @;VQD1&EC=$-N="!C;W5N=&1I8W1S
M=&1I8W1S=&%C:R!O;&1$:6-T0VYT('-U8B![<&]P?7)E<&5A=')]&(&5N9"!](&EF
M96QS92!](&EF( HO;VQD1&EC=$-N="!C;W5N=&1I8W1S=&%C:R!D968@>VQE
M/1E<@I]<W10<'!E9" *>R!C;W5N=&1I8W1S=&%C:R!O;&1$:6-T0VYT(&QT
M*'L@5VEN,S5$:6-T(&)E9VEN('T@"GLQ(#$$@8V]U;G1D:6-T<W1A8VL@;VQD
M1&EC=$-N="!S=6(@>W!O<"!E;F0@?2!F;W(@?2!I9F5L<V4@?2!I9B *6PI[
M;6%R:R Q+C @,2XP("XY." N.2 N.#(@+C8X("XU-B N-#@@+C(X("XQ("XP
M-B N,"!C;W5N='1O;6%R:R!D=7 @,R!A9&0@+3$$@<F5L;#"!E>&-H(#(@<W5B
M(&UU;"!D=7 @9FQO;W(@(#$$@<F5L;#"!S=6(@97AC:"!D=7 @;6]D("!D=7 @
M(#,@861D(&EN9&5X(&5X8V@@,B!A9&0@:6YD97@@9'5P(#0@,2!R;VQL('-U
M8B!M=6P@861D(&-O=6YT=&]M87)K(#$$@861D(#$$@<F]L;" @8VQE87)T;VVUA
M<FL@?2!B:6YD"B]]E>&5C(&QO860@8W5R<F5N=&5F;&%T;F5S<R!]E>&5C(&QO
M861=(&-V>"!S971F;&%T("!C;&5A<G1O;6%R:R!]E=&9L870@<V5T;&EN95R92![('!O
M<" S+# @,"S P('-E=&-O;&]R<F=B(&ED96YT;6%T<FEX(&YE=W!A=&@@,"!G
M93H@,"2 Q(&5X96-H(#$$@,"!D96)U9%DP3I4PHP(# @,"4@,"3$@,"!S970@
M-SDX(#$$Q(# @,"S P("-@,"!C;W5N=&1I8W1S=&%C:R!<VAO=R!C;&5A<G1O;6%R
M-B N,"!C;W5N=&1I8W1S=&%C:R!<VAO=R!C;&5A<G1O;6%R:R!W86QL+C8@
M:R!]E>&5C(&QO860@8W5R<F5N=&5F;&%T;F5S<R!]E>&5C(&QO861=(&-V>"!S
M0F]L9" O;F]T9&5F(&%T=&5M<'0@0V]N9&5N<V5D($)O;&0@?2!]E>&5C(&QO
M9&8@9F]N=&1I8W0@8F5G:6X@+T-H87)3=')I;F=S(#(U-B!A<G)A>2!D968@
M(&-H87)P871H("!E;F0@,"X@+3$$@9&5F(&5N9"!D968@96YD('!U="!]E;F0@
M```
```

```
M9W,@,C$W,B S,C,Q(# @,"!#0@HT-S8@-#0S(#$P," H4U5.*2 Q,# @4T(*
M9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HW,3D@-#0S(#$Q-B H34].*2 Q,38@
M4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HY-C$@-#0S(#DX("A4544I(#DX
M(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3(P,R T-#,@,3$S("A7140I
M(#$Q,R!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C$T-#4@-#0S(#$P,R H
M5$A5*2 Q,#,@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ-C@X(#0T,R W
M-R H1E))*2 W-R!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C$Y,S @-#0S
M(#DT("A3050I(#DT(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,C<R(#4R
M," Q.#8@*#$R.C0U(&%M*2 Q.#8@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#
M0@HT-S8@-3(P(#$U,R H5D])0T4I(#$U,R!30@IG<@IG<R R,3<R(#,R,S$@
M," P($-""C<Q.2 U,C @,34S("A63TE#12D@,34S(%-""F=R"F=S(#(Q-S(@
M,S(S,2 P(# @0T(*.38Q(#4R," Q-3,@*%9/24-%*2 Q-3,@4T(*9W(*9W,@
M,C$W,B S,C,Q(# @,"!#0@HQ,C S(#4R," Q-3,@*%9/24-%*2 Q-3,@4T(*
M9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ-#0U(#4R," Q-3,@*%9/24-%*2 Q
M-3,@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ-C@X(#4R," Q-3,@*%9/
M24-%*2 Q-3,@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ.3,P(#4R," Q
M-3,@*%9/24-%*2 Q-3,@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HR.3<@
M-3DW(#$V,2 H.3HP,"!A;2D@,38Q(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @
M0T(*-S$Y(#4Y-R X.2 H4T-0*2 X.2!30@IG<@IG<R R,3<R(#,R,S$@," P
M($-""CDV,2 U.3<@.#@@*$9#4"D@.#@@4T(*9W(*9W,@,C$W,B S,C,Q(# @
M,"!#0@HQ,C S(#4Y-R X.2 H4T-0*2 X.2!30@IG<@IG<R R,3<R(#,R,S$@
M," P($-""C$T-#4@-3DW(#@X("A&0U I(#@X(%-""F=R"F=S(#(Q-S(@,S(S
M,2 P(# @0T(*,38X." U.3<@.#D@*%-#4"D@.#D@4T(*9W(*9W,@,C$W,B S
M,C,Q(# @,"!#0@HR-S(@-C<U(#$X-B H,3 Z,# @86TI(#$X-B!30@IG<@IG
M<R R,3<R(#,R,S$@," P($-""C<Q.2 V-S4@,3$R("A#5T(I(#$Q,B!30@IG
M<@IG<R R,3<R(#,R,S$@," P($-""CDV,2 V-S4@,3$R("A#5T(I(#$Q,B!3
M0@IG<@IG<R R,3<R(#,R,S$@," P($-""C$R,#,@-C<U(#$Q,B H0U="*2 Q
M,3(@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ-#0U(#8W-2 Q,3(@*$-7
M0BD@,3$R(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,38X." V-S4@,3$R
M("A#5T(I(#$Q,B!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C(W,B W-3(@
M,3@V("@Q,3HP,"!A;2D@,3@V(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*
M-S$Y(#<U,B Q,S$@*%1464(I(#$S,2!30@IG<@IG<R R,3<R(#,R,S$@," P
M($-""CDV,2 W-3(@,3,Q("A45%E"*2 Q,S$@4T(*9W(*9W,@,C$W,B S,C,Q
M(# @,"!#0@HQ,C S(#<U,B Q,S$@*%1464(I(#$S,2!30@IG<@IG<R R,3<R
M(#,R,S$@," P($-""C$T-#4@-S4R(#$S,2 H5%190BD@,3,Q(%-""F=R"F=S
M(#(Q-S(@,S(S,2 P(# @0T(*,38X." W-3(@,3,Q("A45%E"*2 Q,S$@4T(*
M9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HR.30@.#(Y(#$V-" H-#HP,"!P;2D@
M,38T(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*-#<V(#@R.2 X.2 H4T-0
M*2 X.2!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C<Q.2 X,CD@.#@@*$9#
M4"D@.#@@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HY-C$@.#(Y(#@Y("A3
M0U I(#@Y(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3(P,R X,CD@.#@@
M*$9#4"D@.#@@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ-#0U(#@R.2 X
M.2 H4T-0*2 X.2!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C$V.#@@.#(Y
M(#@X("A&0U I(#@X(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3DS," X
M,CD@.#D@*%-#4"D@.#D@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HR.30@
M.3 V(#$V-" H-3HP,"!P;2D@,38T(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @
M0T(*-#<V(#DP-B Q,3(@*$-70BD@,3$R(%-""F=R"F=S(#(Q-S(@,S(S,2 P
M(# @0T(*-S$Y(#DP-B Q,3(@*$-70BD@,3$R(%-""F=R"F=S(#(Q-S(@,S(S
M,2 P(# @0T(*.38Q(#DP-B Q,3(@*$-70BD@,3$R(%-""F=R"F=S(#(Q-S(@
M,S(S,2 P(# @0T(*,3(P,R Y,#8@,3$R("A#5T(I(#$Q,B!30@IG<@IG<R R
M,3<R(#,R,S$@," P($-""C$T-#4@.3 V(#$Q,B H0U="*2 Q,3(@4T(*9W(*
M9W,@,C$W,B S,C,Q(# @,"!#0@HQ-C@X(#DP-B Q,3(@*$-70BD@,3$R(%-"
M"F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3DS," Y,#8@,3$R("A#5T(I(#$Q
M,B!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C(Y-" Y.#,@,38T("@V.C P
M('!M*2 Q-C0@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HT-S8@.3@S(#$S
M,2 H5%190BD@,3,Q(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*-S$Y(#DX
M,R Q,S$@*%1464(I(#$S,2!30@IG<@IG<R R,3<R(#,R,S$@," P($-""CDV
M,2 Y.#,@,3,Q("A45%E"*2 Q,S$@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#
M0@HQ,C S(#DX,R Q,S$@*%1464(I(#$S,2!30@IG<@IG<R R,3<R(#,R,S$@
M," P($-""C$T-#4@.3@S(#$S,2 H5%190BD@,3,Q(%-""F=R"F=S(#(Q-S(@
M,S(S,2 P(# @0T(*,38X." Y.#,@,3,Q("A45%E"*2 Q,S$@4T(*9W(*9W,@
M,C$W,B S,C,Q(# @,"!#0@HQ.3,P(#DX,R Q,S$@*%1464(I(#$S,2!30@IG
M<@IG<R R,3<R(#,R,S$@," P($-""C(Y-" Q,#8P(#$V-" H-SHP,"!P;2D@
M,38T(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*-#<V(#$P-C @.#@@*$9#
M4"D@.#@@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HW,3D@,3 V," X.2 H
M4T-0*2 X.2!30@IG<@IG<R R,3<R(#,R,S$@," P($-""CDV,2 Q,#8P(#@X
M("A&0U I(#@X(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3(P,R Q,#8P
M(#@Y("A30U I(#@Y(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,30T-2 Q
M,#8P(#@X("A&0U I(#@X(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,38X
M." Q,#8P(#@Y("A30U I(#@Y(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*
M,3DS," Q,#8P(#@X("A&0U I(#@X(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @
M0T(*,CDT(#$Q,S<@,38T("@X.C P('!M*2 Q-C0@4T(*9W(*9W,@,C$W,B S
M,C,Q(# @,"!#0@HT-S8@,3$S-R Q,3(@*$-70BD@,3$R(%-""F=R"F=S(#(Q
M-S(@,S(S,2 P(# @0T(*-S$Y(#$Q,S<@,3$R("A#5T(I(#$Q,B!30@IG<@IG
M<R R,3<R(#,R,S$@," P($-""CDV,2 Q,3,W(#$Q,B H0U="*2 Q,3(@4T(*
M9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ,C S(#$Q,S<@,3$R("A#5T(I(#$Q
M,B!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C$T-#4@,3$S-R Q,3(@*$-7
M0BD@,3$R(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,38X." Q,3,W(#$Q
M,B H0U="*2 Q,3(@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ.3,P(#$Q
M,S<@,3$R("A#5T(I(#$Q,B!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C(Y
M-" Q,C$T(#$V-" H.3HP,"!P;2D@,38T(%-""F=R"F=S(#(Q-S(@,S(S,2 P
M(# @0T(*-#<V(#$R,30@,3,Q("A45%E"*2 Q,S$@4T(*9W(*9W,@,C$W,B S
M,C,Q(# @,"!#0@HW,3D@,3(Q-" Q,S$@*%1464(I(#$S,2!30@IG<@IG<R R
M,3<R(#,R,S$@," P($-""CDV,2 Q,C$T(#$S,2 H5%190BD@,3,Q(%-""F=R
M"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3(P,R Q,C$T(#$S,2 H5%190BD@,3,Q
M(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,30T-2 Q,C$T(#$S,2 H5%19
M0BD@,3,Q(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,38X." Q,C$T(#$S
M,2 H5%190BD@,3,Q(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3DS," Q
M,C$T(#$S,2 H5%190BD@,3,Q(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*
M,CDT(#$R.3$@,38T("@Y.C0U('!M*2 Q-C0@4T(*9W(*9W,@,C$W,B S,C,Q
M(# @,"!#0@HT-S8@,3(Y,2 Q-3,@*%9/24-%*2 Q-3,@4T(*9W(*9W,@,C$W
M,B S,C,Q(# @,"!#0@HW,3D@,3(Y,2 Q-3,@*%9/24-%*2 Q-3,@4T(*9W(*
M9W,@,C$W,B S,C,Q(# @,"!#0@HY-C$@,3(Y,2 Q-3,@*%9/24-%*2 Q-3,@
M4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ,C S(#$R.3$@,34S("A63TE#
M12D@,34S(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,30T-2 Q,CDQ(#$U
M,R H5D])0T4I(#$U,R!30@IG<@IG<R R,3<R(#,R,S$@," P($-""C$V.#@@
M,3(Y,2 Q-3,@*%9/24-%*2 Q-3,@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#
M0@HQ.3,P(#$R.3$@,34S("A63TE#12D@,34S(%-""F=R"F=S(#(Q-S(@,S(S
M,2 P(# @0T(*,C8Y(#$S-C@@,3@Y("@Q,#HP,"!P;2D@,3@Y(%-""F=R"F=S
M(#(Q-S(@,S(S,2 P(# @0T(*-#<V(#$S-C@@.#D@*%-#4"D@.#D@4T(*9W(*
M9W,@,C$W,B S,C,Q(# @,"!#0@HW,3D@,3,V." X." H1D-0*2 X."!30@IG
M<@IG<R R,3<R(#,R,S$@," P($-""CDV,2 Q,S8X(#@Y("A30U I(#@Y(%-"
M"F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3(P,R Q,S8X(#@X("A&0U I(#@X
M(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,30T-2 Q,S8X(#@Y("A30U I
M(#@Y(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,38X." Q,S8X(#@X("A&
M0U I(#@X(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3DS," Q,S8X(#@Y
M("A30U I(#@Y(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,C8Y(#$T-#4@
M,3@Y("@Q,3HP,"!P;2D@,3@Y(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*
M-#<V(#$T-#4@,3$R("A#5T(I(#$Q,B!30@IG<@IG<R R,3<R(#,R,S$@," P
M($-""C<Q.2 Q-#0U(#$Q,B H0U="*2 Q,3(@4T(*9W(*9W,@,C$W,B S,C,Q
M(# @,"!#0@HY-C$@,30T-2 Q,3(@*$-70BD@,3$R(%-""F=R"F=S(#(Q-S(@
M,S(S,2 P(# @0T(*,3(P,R Q-#0U(#$Q,B H0U="*2 Q,3(@4T(*9W(*9W,@
M,C$W,B S,C,Q(# @,"!#0@HQ-#0U(#$T-#4@,3$R("A#5T(I(#$Q,B!30@IG
M<@IG<R R,3<R(#,R,S$@," P($-""C$V.#@@,30T-2 Q,3(@*$-70BD@,3$R
M(%-""F=R"F=S(#(Q-S(@,S(S,2 P(# @0T(*,3DS," Q-#0U(#$Q,B H0U="
M*2 Q,3(@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HR-CD@,34R,B Q.#D@
M*#$R.C P('!M*2 Q.#D@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HT-S8@
M,34R,B Q,S$@*%1464(I(#$S,2!30@IG<@IG<R R,3<R(#,R,S$@," P($-"
M"C<Q.2 Q-3(R(#$S,2 H5%190BD@,3,Q(%-""F=R"F=S(#(Q-S(@,S(S,2 P
M(# @0T(*.38Q(#$U,C(@,3,Q("A45%E"*2 Q,S$@4T(*9W(*9W,@,C$W,B S
M,C,Q(# @,"!#0@HQ,C S(#$U,C(@,3,Q("A45%E"*2 Q,S$@4T(*9W(*9W,@
M,C$W,B S,C,Q(# @,"!#0@HQ-#0U(#$U,C(@,3,Q("A45%E"*2 Q,S$@4T(*
M9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ-C@X(#$U,C(@,3,Q("A45%E"*2 Q
M,S$@4T(*9W(*9W,@,C$W,B S,C,Q(# @,"!#0@HQ.3,P(#$U,C(@,3,Q("A4
M5%E"*2 Q,S$@4T(*9W(*," P(# @9D,*+V9M(#(U-B!D968*,3<P," W(#0V
M-R T,S,@0@HQ($8*;@HQ.3,W(#<@,C,P(#4P-2!""C$@1@IN"C$Y-#(@-R R
M,C4@,34X-"!""C$@1@IN"C<@,3 X,R R,C4@-3 Y($(*,2!&"FX*-R Q,34U
M(#0V,R T,S<@0@HQ($8*;@HW(#$Q-3D@-S U(#0S,R!""C$@1@IN"C<@,3$U
M.2 Y-#@@-#,S($(*,2!&"FX*-R Q,34Y(#$Q.3 @-#,S($(*,2!&"FX*-R Q
M,34Y(#$T,S(@-#,S($(*,2!&"FX*-R Q,34Y(#$V-S4@-#,S($(*,2!&"FX*
M-R Q,34Y(#$Y,3<@-#,S($(*,2!&"FX*-R Q,34Y(#(Q-3D@-#,S($(*,2!&
M"FX*,S(@," P(#4P(#4P(# @," P(#0U("]4:6UE<RU";VQD271A;&EC("]F
M;VYT,S @04Y3249O;G0@9F]N= HR,C4@,38U." Q,#<@*$ME>3H@*2 Q,#<@
M4T(*,S<U(#$V-3@@.3(@*%-#4"D@.3(@4T(*-3(U(#$V-3@@-#(V("@@(%-L
M;W<@0V]D92!0<F%C=&EC92D@-#(V(%-""C$Q,C4@,38U." Y-R H1D-0*2 Y
M-R!30@HQ,C<U(#$V-3@@-#$W("@@($9A<W0@0V]D92!0<F%C=&EC92D@-#$W
M(%-""C,R(#$@,"!U," U," P(#$@,"!T-2 O5&EM97,M0F]L9$ET86QI8R O
M9F]N=#$P($%.4TE&;VYT(&9O;G0*,S<U(#$W,38@,3$P("A#5T(I(#$Q,"!3
M0@HU,C4@,3<Q-B R.#$L(%0@0U<@0G5L;&5T:6XI(#$X,R!30@HQ,3(U(#$W
M,38@,3(V("A45%E"*2 Q,C8@4T(*,3(W-2 Q-S$V(#$X.2 H(!45%D@0G5L
M;&5T:6XI(#$Y.2!30@HS,B P(# @-3 @-3 @," P(# @-#4@+U1I;65S+4)O
M;&1)=&%L:6,@+V90;G0S,"!!3E-)1F]N="!F;VYT"C,W-2 Q-S<T(#0W-B H
M5D])0T4@(%9O:6-E($)U;&QE=&EN*2 T-S8@4T(*,S(@," P(#4P(#4P(#$@
M," P(#0V("]4:6UE<RU";VQD("]F;VYT,CD@04Y3249O;G0@9F]N= HQ,#$S
M(#$X.3 @,S<T("A&<F5Q=65N8VEE<R!5<V5D*2 S-S0@4T(*,S(@," P(#4P
M(#4P(# @," P(#0U("]4:6UE<RU2;VUA;B O9F]N=#,R($%.4TE&;VYT(&9O
M;G0*9W,@,C$V." S,C,Q(# @,"!#0@HR,S0@,C Q-B Q,S$@*%1464(I(#$S
M,2!30@IG<@IG<R R,38X(#,R,S$@," P($-""C0Q." R,#$V(#$R-B H,RXV
M,C4@*2 Q,C8@4T(*9W(*9W,@,C$V." S,C,Q(# @,"!#0@HU.#8@,C Q-B Q
M,C8@*#<N,#DU("D@,3(V(%-""F=R"F=S(#(Q-C@@,S(S,2 P(# @0T(*-S4W
M(#(P,38@,34Q("@Q-"XP.34@*2 Q-3$@4T(*9W(*9W,@,C$V." S,C,Q(# @
M,"!#0@HY,C@@,C Q-B Q-S8@*#$X+C$P,C4@*2 Q-S8@4T(*9W(*9W,@,C$V
M." S,C,Q(# @,"!#0@HQ,3,Y(#(P,38@,34Q("@R,2XP.34@*2 Q-3$@4T(*
M9W(*9W,@,C$V." S,C,Q(# @,"!#0@HQ,S4Q(#(P,38@,34Q("@R."XP.34@
M*2 Q-3$@4T(*9W(*9W,@,C$V." S,C,Q(# @,"!#0@HR,S0@,C Y,R W.2 H
M0U<I(#<Y(%-""F=R"F=S(#(Q-C@@,S(S,2 P(# @0T(*-#$X(#(P.3,@,3(V
M("@Q+C@Q." I(#$R-B!30@IG<@IG<R R,38X(#,R,S$@," P($-""C4X-B R
M,#DS(#$U,2 H,RXU.#$U("D@,34Q(%-""F=R"F=S(#(Q-C@@,S(S,2 P(# @
M0T(*-S4W(#(P.3,@,34Q("@W+C T-S4@*2 Q-3$@4T(*9W(*9W,@,C$V." S
M,C,Q(# @,"!#0@HY,C@@,C Y,R Q-S8@*#$T+C T-S4@*2 Q-S8@4T(*9W(*
M9W,@,C$V." S,C,Q(# @,"!#0@HQ,3,Y(#(P.3,@,3<V("@Q."XP.3<U("D@
M,3<V(%-""F=R"F=S(#(Q-C@@,S(S,2 P(# @0T(*,3,U,2 R,#DS(#$W-B H
M,C$N,#8W-2 I(#$W-B!30@IG<@IG<R R,38X(#,R,S$@," P($-""C$U-#4@
M,C Y,R Q-S8@*#(X+C V-S4@*2 Q-S8@4T(*9W(*9W,@,C$V." S,C,Q(# @
M,"!#0@HQ.#0X(#(P.3,@,C<X("@Q-#<N-34U($U(>BD@,C<X(%-""F=R"F=S
M(#(Q-C@@,S(S,2 P(# @0T(*,C,T(#(Q-S@@,34S("A63TE#12D@,34S(%-"
M"F=R"F=S(#(Q-C@@,S(S,2 P(# @0T(*-#$X(#(Q-S@@,3 Q("@S+CDY("D@
M,3 Q(%-""F=R"F=S(#(Q-C@@,S(S,2 P(# @0T(*-3@V(#(Q-S@@,3 Q("@W
M+C(Y("D@,3 Q(%-""F=R"F=S(#(Q-C@@,S(S,2 P(# @0T(*-S4W(#(Q-S@@
M,3(V("@Q-"XR.2 I(#$R-B!30@IG<@IG<R R,38X(#,R,S$@," P($-""CDR
M." R,3<Q(#$U,2 H,3@N,38P("D@,34Q(%-""F=R"F=S(#(Q-C@@,S(S,2 P
M(# @0T(*,3$S.2 R,3<Q(#$R-B H,C$N,SD@*2 Q,C8@4T(*9W(*9W,@,C$V
M." S,C,Q(# @,"!#0@HQ,S4Q(#(Q-S@@,3(V("@R."XU.2 I(#$R-B!30@IG
M<@IG<R R,38X(#,R,S$@," P($-""C$U-#4@,C$W,2 R-S@@*#$T-RXU-34@
M34AZ*2 R-S@@4T(*9W(*,3DS." W(#(R-2 R,# V($(*,2!&"FX*,3DS." W
M(#(R-2 R,#<X($(*,2!&"FX*,3DS." W(#(R-2 R,34U($(*,2!&"FX*,3DS
M." W(#(R-2 R,C,R($(*,2!&"FX*-R R,S0@,C(U(#(P,#8@0@HQ($8*;@HW
M(#(S-" T,#4@,C P-B!""C$@1@IN"C<@,C,T(#4W,R R,# V($(*,2!&"FX*
M-R R,S0@-S0T(#(P,#8@0@HQ($8*;@HW(#(S-" Y,30@,C P-B!""C$@1@IN
M"C<@,C,T(#$Q,C8@,C P-B!""C$@1@IN"C<@,C,T(#$S,S@@,C P-B!""C$@
M1@IN"C<@,C,T(#$U,S(@,C P-B!""C$@1@IN"C<@,C,T(#$X,S4@,C P-B!"
M"C$@1@IN"C<@,C,T(#(Q-34@,C P-B!""C$@1@IN"C,R(# @," U," U," P
M(# @," T-2 O5&EM97,M0F]L9$ET86QI8R O9F]N=#,P($%.4TE&;VYT(&9O
M;G0*,C(U(#(S,#@@,3,S("A.;W1E<SHI(#$S,R!30@HQ(&QC"C$@;&H*," P
M(# @<$,*," Q(%-0"C0@-" R,C@@,C0U,B!%"C$@1@I3"FX*,S(@," P(#4P
M(#4P(# @," P(#0U("]4:6UE<RU2;VUA;B O9F]N=#,R($%.4TE&;VYT(&9O
M;G0*,C@U(#(T,C(@,38X,R H5%190B!A<F4@-#4N-#4M8F%U9"!"875D;W0L
M(#$Q,"UB875D($%30TE)(&%N9" Q,# M8F%U9"!!351/4BP@1D5#(&%U9&4I
M(#$V.#,@4T(*-" T(#(R." R,3,P($(*,2!&"E,*;@HS,B P(# @-3 @-3 @
M," P(# @-#4@+U1I;65S+5)O;6%N("]F;VYT,S(@04Y32490;G0@9F]N= HR
M.#4@,C0X," V.3<@*$-7(%)(=4F-&E<R!A<V5N="!A=" Q."!74$TN
M*2 V.3<@4T(*-" T(#(R." R-38X($(*,2!&"E,*;@HS,B P(# @-3 @-3 @
M," P(# @-#4@+U1I;65S+5)O;6%N("]F;VYT,S(@04Y32490;G0@9F]N= HR
M.#4@,C4S." Q-S0V("A#4"!T97AT<R!A<F4@9G)O;2!14U0L('-O=7)C92!O
M9B!E86-H(&ES(&=I=F5N(&%T(&)E9VEN;FEN9R!O9B!E86-H('!R86-T:6-E
M(&%N9"!A="!T:&4I(#$W-#8@4T(*,C@U(#(U.38@-3DX("AB96=I;FYI;F<@
M;V8@86QT97)N871E('-P965D<RXI(#4Y."!30@HT(#0@,C(X(#(V.#0@10HQ
M($8*4PIN"C,R(# @," U," U," P(# @," T-2 O5&EM97,M4F]M86X@+V9O
M;G0S,B!!3E-)1F]N="!F;VYT"C(X-2 R-C4U(#(W,R H4T-0(&ES(&%T(#4L
M(#<I(#(W,R!30@HS,B P(# @-3 @-3 @," P(# @-#4@+U1I;65S+5)O;6%N
M("]F;VYT,S(@04Y32490;G0@9F]N= HU-3@@,C8U-2 S." H7#(W-2D@,S@@
M4T(*-3DV(#(V-34@-#,P("@L(#$P+" Q,R!A;F0@,34@5U!-*2 T,S @4T(*
M,S(@," P(#4P(#4P(# @," P(#0U("]4:6UE<RU2;VUA;B O9F]N=#,R($%.
M4TE&;VYT(&9O;G0*,3 R-B R-C4U(#$S("@N*2 Q,R!30@HT(#0@,C(X(#(W
M-#0@10HQ($8*4PIN"C,R(# @," U," U," P(# @," T-2 O5&EM97,M4F]M
M86X@+V9O;G0S,B!!3E-)1F]N="!F;VYT"C(X-2 R-S$T(#DR.2 H1D-0(&ES
M(&%T(#,U+" S,"P@,C4L(#(P+" Q-2 Q,"!74$TN*2 Y,CD@
M4T(*,2 C0PIS=&%T=7-D:6-T(&)E9VEN("]M86YU86QF965D(&9A;'-E('-T
M;W)E(&5N9 I%2B!24PHE)5!A9V54<F%I;&5R"B4E4&%G97)E<V]U<F-E<SH@
M9F]N="!4:6UE<RU2;VUA;B!F;VYT(%1I;65S+4)O;&1)=&%L:6,*)24K
M(&9O;G0@5&EM97,M4F]M86X*)254<F%I;&5R"E-61&]C(')E<W10<F4*96YD
M"B4E4&%G97,Z(#$*)2!4<G5E5'EP92!F;VYT(&YA;64@:V5Y.@HE(" @($U3
M5%0S,6,R96(@/2 R9#@W1%1I;65S($YE=R!2;VUA;D8P,# P,# P,# P,# P
M,3DP,# P," HE(" @($U35%0S,6,R9C@@/2 R9#@W1%1I;65S($YE=R!2;VUA
M;D8P,# P,# P,# P,# P,F)C,# P,# P," HE)4108W5M96YT4W5P<&QI961297-O
M=7)C97,Z('!R;V-S970@5VEN,S5$:6-T(#,@,0H*)25$;V-U;65N=$YE961E
M9%)E<V]U<F-E<SH@9F]N="!4:6UE<RU2;VUA;B!F;VYT(%1I;65S+4)O;&1)
F;&1)=&%L:6,*)24K(&9O;G0@5&EM97,M4F]M86X*"B4E14]&"@1I
```

end
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Date: Wed, 9 Mar 1994 09:11:49 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu
To: info-hams@ucsd.edu

References <2lg5vo$err@news.delphi.com>, <1994Mar8.143141.29301@ke4zv.atl.ga.us>, <wilpwr.10.01ED6FC6@rsvl.unisys.com>
Reply-To : gary@ke4zv.UUCP (Gary Coffman)
Subject : Re: Keyboards at testing sessions

In article <wilpwr.10.01ED6FC6@rsvl.unisys.com> wilpwr@rsvl.unisys.com (Bill Powers) writes:
>In article <1994Mar8.143141.29301@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>
>> Since most intercepted traffic is encoded, and most commercial
>>traffic heavily abbreviated and filled with "commercial codes", flawless
>>copy is mandatory or all meaning could be lost. That's what the FCC wants
>>on the test too, though the current amateur test doesn't require zero errors,
>>just one minute out of five perfect copy, or the answers to the multiple choice
>>questions as the case may be. That level of performance would wash you out at
>>military or commercial levels of required accuracy.
>
>I seem to remember that back when I took my 13 wpm code test in the FCC
>offices in NYC, the receiving portion of the test required only one solid
>minute out of five or so. I don't remember whether the text was plain or
>code groups. Of course, there was also a sending test, using a straight key.
>
>It was 1960 or 1961, I was in high school, and intimidated by all the glory
>and grandeur of the Federal Gummint, so my memory may not be very accurate.
>The point is that, at least at that time, the FCC didn't require 100% accuracy
>for the entire test session, just a burst.

That's right, the FCC doesn't require the level of copy from amateurs that
is required from military or commercial operators, and never has. My test
in 1963 consisted of 5 letter code groups, sent and received, though I
understand some field offices were using plain text tapes on their
Instructographs. Since the amateur service is supposed to be "self training",
the exams are merely entrance exams. You're not expected to have developed
complete mastery until you've actually done the "learning by doing" on the air.

Gary

```
--
Gary Coffman KE4ZV          |    You make it,     | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems |    we break it.     | uunet!rsiatl!ke4zv!gary
534 Shannon Way             |    Guaranteed!      | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244     |                     |
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End of Info-Hams Digest V94 #266
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